AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An electric motor and brake system, comprising:

a motor portion comprising:

an electrical core surrounded by a frame;

a motor shaft coupled to the electrical core; and

an end shield coupled to the frame located at a drive end of the motor;

an integral field cup and front end shield having a first side and a second side, the first side coupled to the frame located at an opposite drive end of the motor; and

a brake portion coupled on a first side to the second side of the integral field cup and front end shield and coupled on a second side to an armature plate, at least one electromagnetic coil supported within the second side of the integral field cup and front end shield, at least one compression spring disposed between the armature plate and the at least one electromagnetic coil, the armature plate coupled to a friction disk coupled to the motor shaft wherein the armature plate is operable to actuate axially toward the friction disk and a stationary plate such that a force is applied to the friction disk thereby holding the motor shaft in a rotatably fixed state; and

a fan located outside the brake portion, the fan being operable to provide cooling air to the motor and the brake.

2. (Original) The system of claim 1, further comprising a first bearing assembly coupled to an inside surface of the end shield, the first bearing assembly being operable to support the motor shaft at the drive end of the motor.

3. (Original) The system of claim 2, further comprising a second bearing assembly coupled to the first side of the integral field cup and front end shield, the second bearing assembly being operable to support the motor shaft at the opposite drive end of the motor.

4. (Original) The system of claim 3, the first bearing assembly being disposed between a first inner cap and an inside surface of the end shield and the second bearing assembly being disposed between a second inner cap and an inside surface of the first side of the integral field cup and front end shield.

5. (Original) The system of claim 1, the second side of the integral field cup and front end shield comprising two concentric ring shaped extrusions and being adapted to support an electromagnetic coil between the two concentric ring shaped extrusions, the first side integral field cup and front end shield being adapted to support a bearing assembly.

6. (Original) The system of claim 5, the integral field cup and front end shield comprising axially extending fins alongside the outside surface of the integral field cup and front end shield, the axially extending fins being adapted to channel airflow.

7. (Cancelled)

8. (Cancelled)

9. (Previously Amended) The system of claim 24, the integral field cup and front end shield being formed from a ferromagnetic material and the armature plate being formed from a ferromagnetic material wherein energizing the electromagnetic coil magnetizes the integral field cup and front end shield and the armature plate pulling the armature plate away from the friction disk allowing the motor shaft to rotate freely.

10. (Original) The system of claim 9, the brake portion including a fan located outside the fixed stationary plate, the fan being operable to provide cooling air to the motor and the brake.

11. (Original) The system of claim 10, further comprising an aluminum shroud to enclose the brake portion from the environment.

12. (Currently Amended) The system of claim 1 ~~8~~, the at least one compression spring being a wave spring.

13. (Canceled)

14-17 (Withdrawn)

18. (Previously Amended) A method of fabricating an electric motor and brake system, comprising:

providing an electrical core coupled to a motor shaft, the electrical core being surrounded by a frame;

mounting an end shield to the frame at a drive end of the motor, the end shield housing a first bearing assembly being operable to support the motor shaft at the drive end of the motor;

mounting an integral field cup and front end shield having a first side and a second side, the first side housing a second bearing assembly operable to support the motor shaft at the opposite drive end of the motor;

coupling a brake portion to the second side of the integral field cup and front end shield;

inserting an electromagnetic coil into a field cup portion of the integral field cup and front end shield;

providing at least one compression spring disposed over the electromagnetic coil; and

providing an armature plate, friction disk, and stationary plate assembly over the at least one compression spring, the armature plate being axially movable such that the compression spring is operable to move the armature plate and friction disk axially against the stationary plate, the friction disk being coupled to the motor shaft such that holding the friction disk against the stationary plate engages the brake portion and holds the motor shaft in a rotatably fixed state.

19. (Canceled)

20. (Previously Amended) The method of claim 18, the integral field cup and front end shield being formed from a ferromagnetic material and the armature plate being formed from a ferromagnetic material wherein energizing the electromagnetic coil magnetizes the integral field cup and front end shield and the armature plate pulling the armature plate away from the stationary plate allowing the friction disk and motor shaft to rotate freely.

21. (Canceled)

22. (Previously Amended) The method of claim 23, further comprising the step of encasing the brake portion and the fan within an enclosure.

23. (Currently Amended) A method of fabricating an electric motor and brake system, comprising:

providing an electrical core coupled to a motor shaft, the electrical core being surrounded by a frame;

mounting an end shield to the frame at a drive end of the motor, the end shield housing a first bearing assembly being operable to support the motor shaft at the drive end of the motor;

mounting an integral field cup and front end shield having a first side and a second side, the first side housing a second bearing assembly operable to support the motor shaft at the opposite drive end of the motor;

coupling a brake portion to the second side of the integral field cup and front end shield;

inserting at least one electromagnetic coil within the second side of the integral filed cup and front end shield;

positioning at least one compression spring proximate to the electromagnetic coil;

providing a moveable armature plate, a friction disk coupled to the motor shaft, and a stationary plate proximate to the at least one compression spring, the at least one compression spring axially displacing the movable armature plate and friction disk coupled to the motor against the stationary plate such that the friction disk coupled to the motor shaft is compressed between the moveable armature plate and stationary plate to hold the friction disk coupled to the motor shaft in a rotatably stationary state; and

coupling a fan to the opposite drive end of the motor shaft outside the brake portion, the fan being operable to provide cooling air to the brake and the motor.

24. (Previously Presented) An electric motor and brake system, comprising:

a motor portion comprising:

an electrical core surrounded by a frame;

a motor shaft coupled to the electrical core; and

an end shield coupled to the frame located at a drive end of the motor;

an integral field cup and front end shield having a first side and a second side, the first side coupled to the frame located at an opposite drive end of the motor; and

a brake portion coupled to the second side of the integral field cup and front end shield comprising:

an electromagnetic coil supported within the second side of the integral field cup and front end shield; and

a compression spring being disposed between the electromagnetic coil and an armature plate, the armature plate being coupled to a friction disk coupled to the motor shaft wherein the compression spring is operable to move the armature plate and friction disk axially against a stationary plate to hold the motor shaft in a rotatably fixed state.

25. (Previously Presented) The system of claim 24, further comprising a first bearing assembly coupled to an inside surface of the end shield, the first bearing assembly being operable to support the motor shaft at the drive end of the motor.

26. (Previously Presented) The system of claim 25, further comprising a second bearing assembly coupled to the first side of the integral field cup and front end shield, the second bearing assembly being operable to support the motor shaft at the opposite drive end of the motor.

27. (Previously Presented) The system of claim 26, the first bearing assembly being disposed between a first inner cap and an inside surface of the end shield and the second bearing assembly being disposed between a second inner cap and an inside surface of the first side of the integral field cup and front end shield.

28. (Previously Presented) The system of claim 24, the integral field cup and front end shield comprising axially extending fins alongside the outside surface of the integral field cup and front end shield, the axially extending fins being adapted to channel airflow.

29. (Previously Presented) The system of claim 1, further comprising an aluminum shroud to enclose the brake portion from the environment.